

ABSTRACT

A single phase sampling apparatus and method for retrieving a formation fluid sample at or above the bubble point of the sample. The apparatus utilizes a gas charge contained between a sample piston and a charging piston to maintain a formation sample at the desired pressure. The charging piston utilizes the hydrostatic pressure present at the depth of the desired formation sample to compress and therefore increase the gas charge to the appropriate pressure necessary to maintain the formation sample at the desired pressure. The utilization of hydrostatic pressure to increase the pressure of the gas charge allows the use of a low pressure gas charging system to prepare the apparatus prior to sampling, thereby increasing the safety and ease of use of the device.